

The Transcendental Meditation program

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I think no physician would deny the implications of stress and anxiety in the expression of both mental and physical illness. Every physician should be prepared to search for effective new additions to our therapeutic and preventive armamentarium. One such addition is Transcendental Meditation (TM).

The TM program was introduced into the United States and Canada 17 years ago by Maharishi Mahesh Yogi. Known for 2500 years, TM is a natural mental technique that requires no elaborate yogic positions, paraphernalia or particular environment. It is not a religion or philosophy and no change in lifestyle, dress or diet is required in order to practise TM.

TM is learned in a 10-hour course over a 1-week period, with regular follow-up for the 1st year. The technique must be taught by a qualified instructor, so the physician must refer suitable patients to public courses held in the community.*

TM is practised for 15 to 20 minutes twice daily. The technique does not involve concentration or contemplation, nor is it a form of self-hypnosis. The individual, after settling down comfortably in a chair for 30 seconds or so with the eyes closed, begins freely thinking a specific sound (or mantra). The procedure has a quieting effect on the mind and subjects report deep physical relaxation occurring as a spontaneous byproduct of the mental process.

Scientific research on the technique of TM began 7 years ago. Because instruction and practice of the technique were so well standardized by Maharishi International Academy, the organization teaching the method, large numbers of uniformly trained subjects were available for study. Many studies have outlined the physiologic changes

occurring during TM and those occurring in everyday life in individuals practising the technique regularly. A paper by Wallace, Benson and Wilson¹ includes the following observations:

During meditation, the respiratory changes consisted of decreased oxygen consumption, CO₂ elimination, respiratory rate and minute ventilation with no change in respiratory quotient. Arterial blood pH and base excess decreased slightly; interestingly blood lactate also decreased. Skin resistance markedly increased while systolic, diastolic and mean arterial blood pressure, arterial PO₂ and PCO₂ and rectal temperature remained unchanged. The electroencephalogram showed an increase in intensity of slow alpha wave and occasional theta wave activity. The physiological changes during meditation differ from those during sleep, hypnosis, autosuggestion and characterize a wakeful hypo-metabolic physiologic state.

The integrated physiologic state produced by TM appears to be the opposite of the fight-or-flight response of an anxiety reaction. The study of Wallace and colleagues has been replicated by Corey² and by Dhanaraj and Singh.³

Electroencephalographic findings of brain wave synchrony and coherence between right and left cerebral hemispheres and anterior and posterior regions of the brain have been reported in the theta, alpha and beta wave frequencies.^{1,4,5}

Increased autonomic stability has been demonstrated by decreased spontaneous galvanic responses in skin resistance.⁶⁻⁸

Others have reported the following findings: appreciable lowering of the blood pressure in hypertensive patients,^{9,10} reduction in the use of alcohol and cigarettes,¹¹ faster recovery from sleep deprivation,¹² relief of insomnia,¹³ return to normal weight in over- or underweight individuals,¹⁴ and improvement in the condition of patients with bronchial asthma.^{2,15-17}

Psychologic studies have demonstrated that TM produces a faster reaction time, superior perceptual motor

performance and broader comprehension and improves attention span. Educational studies have demonstrated an increased intelligence growth rate and learning ability, more logical thinking and improved academic performance in university and high school. Findings of tests have indicated a decrease in anxiety and a growth of personality with the use of TM.

TM has also been used in research in prison rehabilitation, alcoholism¹⁸ and drug abuse¹⁹ programs and inpatient psychiatric treatment.²⁰ Although results of many studies reported are preliminary, I have been impressed by the holistic effects of the technique. It is not a panacea for all disorders but is a valuable adjunct to medical therapy. In my practice 75 patients are now using the technique. Their symptoms range from anxiety, depression and insomnia, to hypertension, asthma, irritable colon syndrome and migraines. Subjectively, their symptoms have been relieved and their attitudes towards their condition have improved; particularly, they appreciate that TM involves no medication.

I believe that TM should be considered in the treatment of psychosomatic disorders and any illness associated with stress, and that this technique should be investigated thoroughly as a method of preventive medicine in the general community. Large studies could be carried out easily on the effect of TM on infectious disease and allergies, and on abuse of alcohol, cigarettes and nonprescribed drugs. If there is any method by which individuals can improve their health in addition to preventing disease it warrants thorough investigation.

Finally, for the personal use of the physician, TM provides an easy means of achieving relaxation. Hospital responsibilities and long office hours, not to mention numerous evening meetings, are fatiguing. TM provides a practical way to prepare for the day's activity and to "wind down" at the end of the day. I have found that with regular

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use of TM my interpersonal relations have improved, my sensitivity to the needs of my patients has been enhanced, and my ability to react under stress has improved. In Alberta approximately 65 of my colleagues are using the technique personally.

Maharishi International Academy is a federally registered nonprofit organization; it charges a fee for instruction in the technique of TM.

I would be pleased to supply further information on TM, including a more complete bibliography of research reviewed. A comprehensive book is available on the TM program, co-authored by a Californian psychiatrist-TM teacher.²¹

I hope the information contained in this communication has corrected some of the misconceptions surrounding the TM technique and opened discussion for its possible application in medicine.

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ALDOMET* (methyldopa, MSD Std.)

INDICATIONS: Sustained moderate through severe hypertension.

DOSAGE SUMMARY: Start usually with 250 mg two or three times daily during the first 48 hours, thereafter adjust at intervals of not less than two days according to the patient's response. Maximal daily dosage is 3.0 g of methyldopa. In the presence of impaired renal function smaller doses may be needed. Syncope in older patients has been related to an increased sensitivity in those patients with advanced arteriosclerotic vascular disease and may be avoided by reducing the dose. Tolerance may occur occasionally between the second and third month after initiating therapy. Effectiveness can frequently be restored by increasing the dose or adding a thiazide.

CONTRAINDICATIONS: Active hepatic disease such as acute hepatitis and active cirrhosis; known sensitivity to methyldopa; unsuitable in mild or labile hypertension responsive to mild sedation or thiazides alone; pheochromocytoma; pregnancy. Use cautiously if there is a history of liver disease or dysfunction.

PRECAUTIONS: Acquired hemolytic anemia has occurred rarely. Hemoglobin and/or hematocrit determinations should be performed when anemia is suspected. If anemia is present, determine if hemolysis is present. Discontinue methyldopa on evidence of hemolytic anemia. Prompt remission usually results on discontinuation alone or the initiation of adrenocortical steroids. Rarely, however, fatalities have occurred. A positive direct Coombs test has been reported in some patients on continued therapy with methyldopa, the exact mechanism and significance of which is not established. Incidence has varied from 10 to 20%. If a positive test is to develop it usually does within 12 months following start of therapy. Reversal of positive test occurs within weeks to months after discontinuation of the drug. Prior knowledge of this reaction will aid in cross matching blood for transfusion. This may result in incompatible minor cross match. If the indirect Coombs test is negative, transfusion with otherwise compatible blood may be carried out. If positive, advisability of transfusion should be determined by a hematologist or expert in transfusion problems. Reversible leukopenia with primary effect on granulocytes has been seen rarely. Rare cases of clinical agranulocytosis have been reported. Granulocyte and leukocyte counts returned promptly to normal on discontinuance of drug. Occasionally fever has occurred within the first three weeks of therapy, sometimes associated with eosinophilia or abnormalities in one or more liver function tests. Jaundice, with or without fever, may occur also, with onset usually within first 2 or 3 months of therapy. Rare cases of fatal hepatic necrosis have been reported. Liver biopsies in several patients with liver dysfunction showed a microscopic focal necrosis compatible with drug hypersensitivity. Determine liver function, leukocyte and differential blood counts at intervals during the first six to twelve weeks of therapy or whenever unexplained fever may occur. Discontinue if fever, abnormalities in liver function tests, or jaundice occur. Methyldopa may potentiate action of other antihypertensive drugs. Followup patients carefully to detect side reactions or unusual manifestations of drug idiosyncrasy. Patients may require reduced doses of anesthetics when on ALDOMET*. If hypotension does occur during anesthesia, it usually can be controlled by vasopressors. The adrenergic receptors remain sensitive during treatment with methyldopa. Hypertension occasionally noted after dialysis in patients treated with ALDOMET* may occur because the drug is removed by this procedure. Rarely involuntary choreoathetotic movements have been observed during therapy with methyldopa in patients with severe bilateral cerebrovascular disease. Should these movements occur, discontinue therapy. Fluorescence in urine samples at same wave lengths as catecholamines may be reported as urinary catecholamines. This will interfere with the diagnosis of pheochromocytoma. Methyldopa will not serve as a diagnostic test for pheochromocytoma. *Usage in Pregnancy:* Because clinical experience and follow-up studies in pregnancy have been limited, the use of methyldopa when pregnancy is present or suspected requires that the benefits of the drug be weighed against the possible hazards to the fetus.

ADVERSE REACTIONS: *Cardiovascular:* Angina pectoris may be aggravated; reduce dosage if symptoms of orthostatic hypotension occur; bradycardia occurs occasionally. *Neurological:* Symptoms associated with effective lowering of blood pressure occasionally seen include dizziness, lightheadedness, and symptoms of cerebrovascular insufficiency. Sedation, usually transient, seen during initial therapy or when dose is increased. Similarly, headache, asthenia, or weakness may be noted as early, but transient symptoms. Rarely reported: paresthesias, parkinsonism, psychic disturbances including nightmares, reversible mild psychoses or depression, and a single case of bilateral Bell's palsy. *Gastrointestinal:* Occasional reactions generally relieved by decrease in dosage: mild dryness of the mouth and gastrointestinal symptoms including distention, constipation, flatus, and diarrhea; rarely, nausea and vomiting. *Hematological:* Positive direct Coombs test, acquired hemolytic anemia, leukopenia and rare cases of thrombocytopenia. *Toxic and Allergic:* Occasional drug related fever and abnormal liver function studies with jaundice and hepatocellular damage (see PRECAUTIONS) and a rise in BUN. Rarely, skin rash, sore tongue or "black tongue", pancreatitis and inflammation of the salivary glands. *Endocrine and Metabolic:* Rarely, breast enlargement, lactation, impotence, decreased libido; weight gain and edema which may be relieved by administering a thiazide diuretic. If edema progresses or signs of pulmonary congestion appear, discontinue drug. *Miscellaneous:* Occasionally nasal stuffiness, mild arthralgia and myalgia; rarely, darkening of urine after voiding.

Full prescribing information available on request.

How Supplied: Tablets ALDOMET* are yellow, film-coated, biconvex shaped tablets, supplied as follows: **Ca 8737**—each tablet containing 125 mg of methyldopa, marked MSD 135 on one side, supplied in bottles of 100 and 1,000. **Ca 3290**—each tablet containing 250 mg of methyldopa, marked MSD 401 on one side, supplied in bottles of 100 and 1,000. **Ca 8733**—each tablet containing 500 mg of methyldopa, marked MSD 516 on one side, supplied in bottles of 100 and 250. Also available: **Ca 3293**—Injection ALDOMET* Ester hydrochloride, a clear colourless solution containing 250 mg methyldopate hydrochloride per 5 ml, supplied in 5 ml ampoules.

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